Title (en)

ULTRASONIC TREATMENT DEVICE

Title (de)

ULTRASCHALLBEHANDLUNGSVORRICHTUNG

Title (fr)

DISPOSITIF DE TRAITEMENT PAR ULTRASONS

Publication

EP 3108837 A4 20180117 (EN)

Application

EP 15748998 A 20150202

Priority

- JP 2014027990 A 20140217
- JP 2015052868 W 20150202

Abstract (en)

[origin: US2016256190A1] An ultrasonic treatment apparatus includes an impedance detecting section detecting an ultrasonic impedance value with time, and a gradual decrease detecting section detecting a gradual decrease start point to start gradual decrease of the ultrasonic impedance value. The ultrasonic treatment apparatus includes a tentative peak value holding section holding the ultrasonic impedance value at the detected gradual decrease start point as a tentative peak value, and a peak judging section judging whether the held tentative peak value is a target peak by comparing, relative to the held tentative peak value, changes with time of the ultrasonic impedance value after the gradual decrease start point.

IPC 8 full level

A61B 18/00 (2006.01); **A61B 17/32** (2006.01); **B06B 1/06** (2006.01); **H01L 41/04** (2006.01); A61B 17/00 (2006.01); A61B 17/28 (2006.01)

CPC (source: EP US)

A61B 17/320092 (2013.01 - EP US); **B06B 1/06** (2013.01 - US); **H10N 30/802** (2023.02 - US); A61B 2017/00026 (2013.01 - EP US); A61B 2017/0003 (2013.01 - EP US); A61B 2017/2825 (2013.01 - EP US); A61B 2017/320093 (2017.07 - EP US); A61B 2017/320095 (2017.07 - EP US); A61B 2018/00875 (2013.01 - EP US)

Citation (search report)

- [XAY] JP 2013031669 A 20130214 - OLYMPUS MEDICAL SYSTEMS CORP
- [Y] US 2010168742 A1 20100701 - SHIBATA NORIKIYO [JP]
- [Y] US 2011082486 A1 20110407 - MESSERLY JEFFREY D [US], et al
- [A] US 2004176717 A1 20040909 - HONDA YOSHITAKA [JP], et al
- See references of WO 2015122309A1

Cited by

US11014192B2; WO2019118341A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 2016256190 A1 20160908; **US 9597106 B2 20170321**; CN 105916459 A 20160831; CN 105916459 B 20180918; EP 3108837 A1 20161228; EP 3108837 A4 20180117; JP 5851664 B1 20160203; JP WO2015122309 A1 20170330; WO 2015122309 A1 20150820

DOCDB simple family (application)

US 201615156969 A 20160517; CN 201580004510 A 20150202; EP 15748998 A 20150202; JP 2015052868 W 20150202; JP 2015544233 A 20150202